NWS FORM E-5 (11-88) (PRES. by NWS Instruction 10-924)

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL WEATHER SERVICE

HYDROLOGIC SERVICE AREA (HSA)
WFO Jackson, Mississippi

MONTHLY REPORT OF HYDROLOGIC CONDITIONS

REPORT FOR:
MONTH: **December** YEAR: **2011**

TO: Hydrometeorological Information Center, W/OH2
NOAA / National Weather Service
1325 East West Highway, Room 7230
Silver Spring, MD 20910-3283

SIGNATURE
Alan E. Gerard, Meteorologist In-Charge

DATE
01/13/2012

When no flooding occurs, include miscellaneous river conditions, such as significant rises, record low stages, ice conditions, snow cover, droughts, and hydrologic products issued (NWS Instruction 10-924)

☐ **An X inside this box indicates that no river flooding occurred within this hydrologic service area.**

Synopsis...

The general weather pattern for the month of December was defined by upper level troughing across the western states and upper level ridging across the eastern states. This produced above normal temperatures across the Hydrologic Service Area (HSA) and below normal rain across Southeast Mississippi. Above normal rainfall became more pronounced in the western and northwestern portions of the HSA. This pattern is fairly common during La Nina winters.

The month began with a deep upper level trough with an embedded closed low pressure center across the Southwest United States. High pressure prevailed across the Arklamiss region through the 3rd. The trough slowly moved eastward pushing a surface cold front slowly across the region from the 4th to the 6th. Rainfall totals ranged from around 0.75 inches in Southeast Mississippi to near 3.00 inches across Southeast Arkansas, northern portions of Northeast Louisiana, and Northwest and North Central Mississippi. Snow accumulations of less than an inch occurred across Southeast Arkansas, northern portions of Northeast Louisiana and portions of the Yazoo Delta Region as the trough deepened as it moved across the area on the 7th. Only slight snow flurries occurred across Central and the remainder of North Mississippi. Weak high pressure moved into the region on the 8th, followed by a stronger reinforcing high pressure center that moved in behind an upper level disturbance on the 10th.

High pressure dominated HSA conditions as yet another trough began to dig into the Southwest United States on the 11th and ridging occurred across the Gulf of Mexico. High pressure remained in control of surface weather until an upper level disturbance pushed ahead of the western trough. An associated surface cold front trekked across the region from the 15th into the 16th. Rainfall which fell along and northwest of the Natchez Trace Parkway ranged from 0.50 to 1.50 inches with some heavier totals in West Central Mississippi up to 3.00 inches. Rainfall southeast of the Trace was less than 0.50 inches.

An upper level low pressure system cut off briefly from the main upper

level flow on the 17th across the Southwest United States. By the 19th, the upper level low pressure center had once again been picked up by the main upper level flow pattern and began to drift eastward to New Mexico while yet another upper level low pressure center dropped back into the southwest trough. The upper level low moved from New Mexico to Illinois by the 21st dragging an associated surface cold front into the region on the 20th and stalling from Southeast Louisiana to Southeast Mississippi. Rainfall from 0.25 to 1.50 inches occurred across Northeast Louisiana, Southeast Arkansas, and Southwest Mississippi. The remainder of Mississippi generally had rainfall of 0.50 inches or less, with some scattered locations having up to 1.50 inches. Another upper level disturbance rapidly pushed eastward from the southwest trough on the 22nd, and this enhanced surface low pressure development along a stalled front near the Southeast Louisiana Coast. Heavy rainfall occurred along and to the north of the low pressure center as it pushed to the northeast on the 22nd while dragging a cold front across the remainder of the region. The front stalled in the northern Gulf of Mexico. Rainfall ranged from 0.25 inches in Southeast Mississippi to 2.50 inches in west, northwest and northern portions of the HSA.

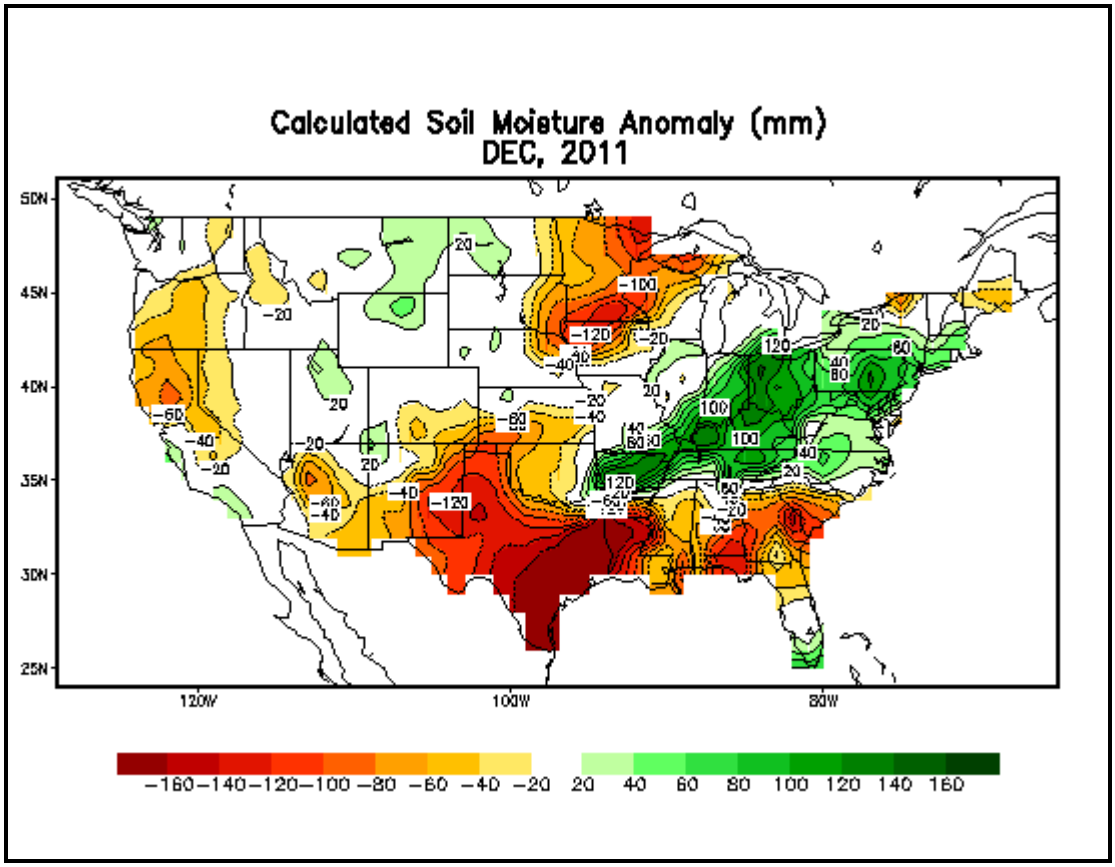
Unsettled weather continued as the deep southwest trough began slowly pushing eastward on the 23rd. This helped produced a surface low pressure center in the Gulf of Mexico along a stalled frontal system. Heavy rainfall fell across the Gulf States from Christmas Day until the 27th as the surface low and upper trough moved across the HSA. Rainfall totals for this event ranged from 1.50 inches in north Mississippi to 5.50 inches in portions of South and Southwest Mississippi.

A weak upper level disturbance with an associated dry surface cold front moved across the area on the 30th and to the Mississippi Coast by the morning of the 31st.

River and Soil Conditions...

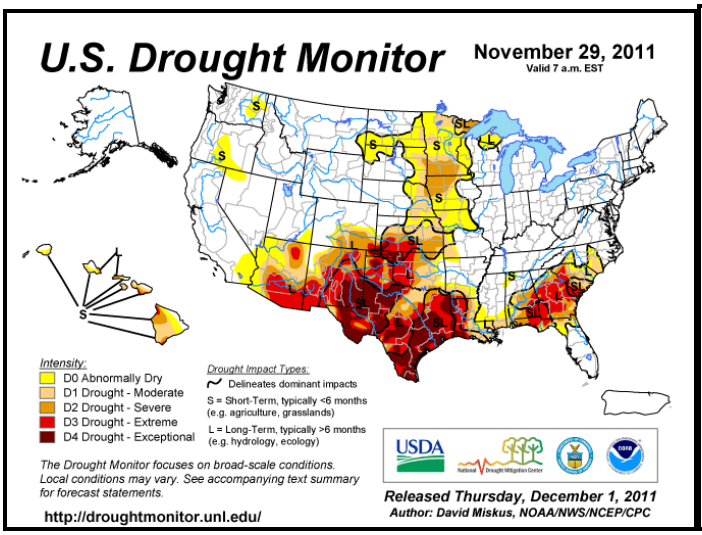
November rainfall was well below normal in extreme Southeast Mississippi, ranging from 25 to 75 percent of normal. Rainfall was above normal in portions of Central, Southwest, and Northeast Mississippi and portions of the Yazoo Delta Region of Mississippi as well as portions of Northeast Louisiana and Southeast Arkansas. Rainfall ranged from 110 to 200 percent of normal. East Central Mississippi had rainfall range from 75 to 90 percent of normal.

The driest soils within the HSA continued to be across Northeast Louisiana, Southeast Arkansas, and extreme western Mississippi.

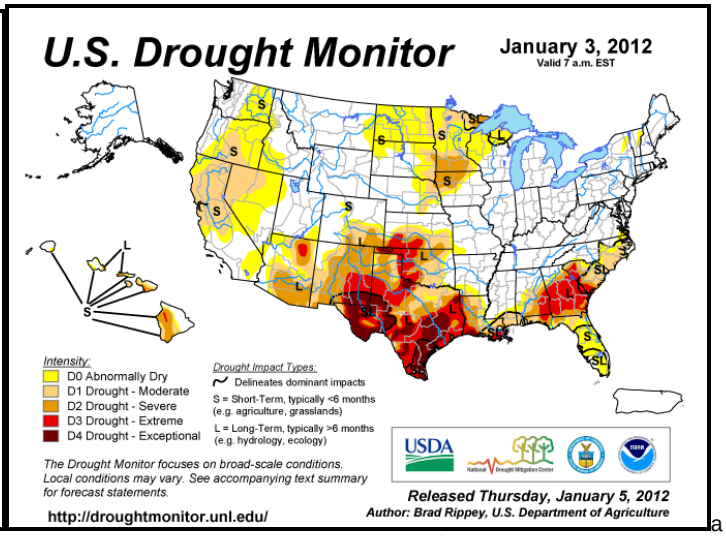


December 2011

A comparison of the November 29th U.S. Drought Monitor to the January 3rd U.S. Drought Monitor showed improvement across Northeast Louisiana and Southeast Arkansas. Drought conditions remained the same in extreme Southeast Mississippi.

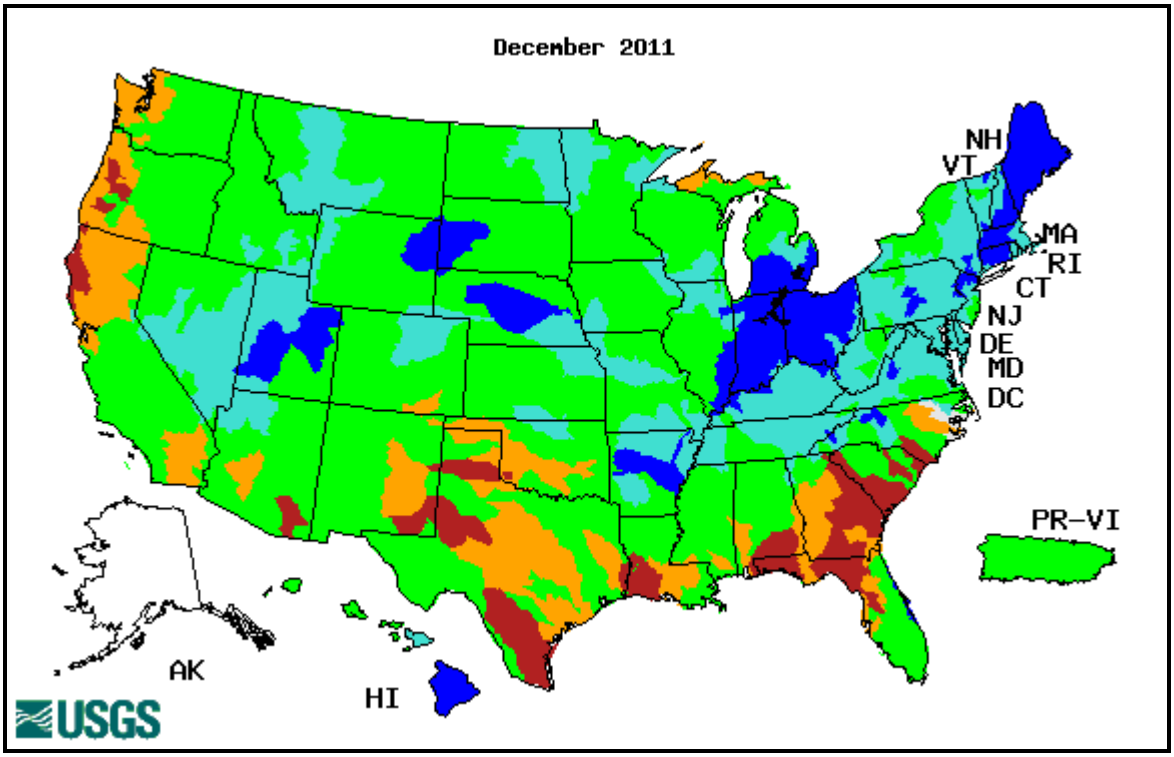


November 29, 2011



January 3rd, 2012

The United States Geological Survey's (USGS) December 2011 river streamflow records were compared with all historical December streamflow records. River streamflow was near normal with the exception of the Black Creek Basin in extreme Southeast Mississippi where below normal streamflow conditions exists.



Explanation - Percentile classes						
Low	<10	10-24	25-75	76-90	>90	High
	Much below normal	Below normal	Normal	Above normal	Much above normal	

The Upper Big Black River in Mississippi and the Lower Boeuf River in Northeast Louisiana rose above flood stage during the month. Most of the remaining rivers within the HSA experienced minor to moderate river rises during the month. The Mississippi River continued a significant river rise during much of the month of December. Arkansas City to Natchez rose above their action stage. The Natchez stage rose to within 2 feet of flood stage.

Soil moisture was below seasonal norms across the HSA. Temperatures are expected to remain above normal while rainfall is expected to remain below normal in the 1 to 3 month time period. With streamflow at normal levels, flood potentials are as follows:

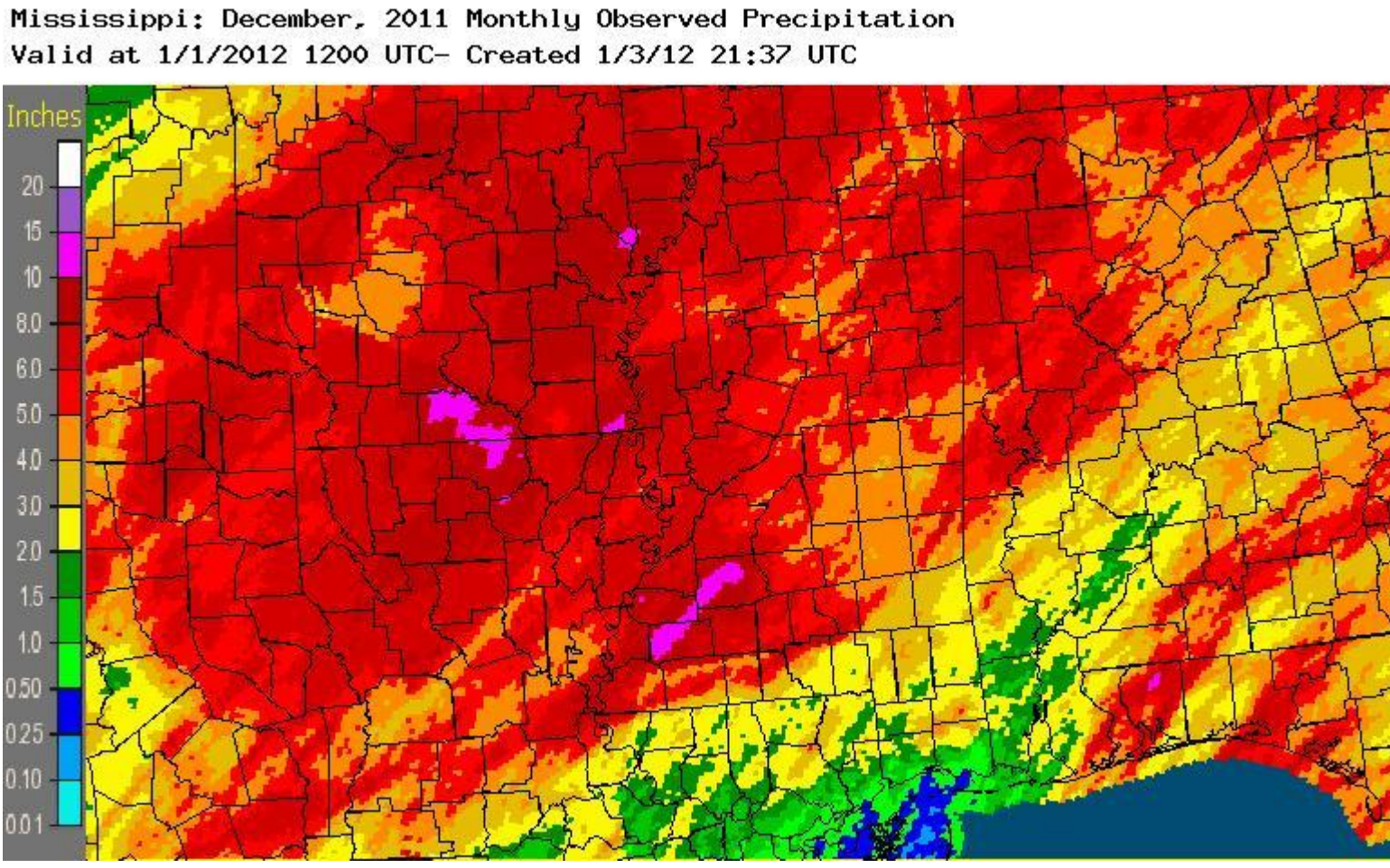
***Pearl River System*: Below Normal.**
***Yazoo River System*: Below Normal.**
***Big Black River System*: Below Normal.**
***Homochitto River System*: Below Normal.**
***Pascagoula River System*: Below Normal.**
***Northeast LA and Southeast AR*: Below Normal.**

***Tombigbee River System*:** **Below Normal.**
Mississippi River: **Normal.**

Rainfall for the month of December

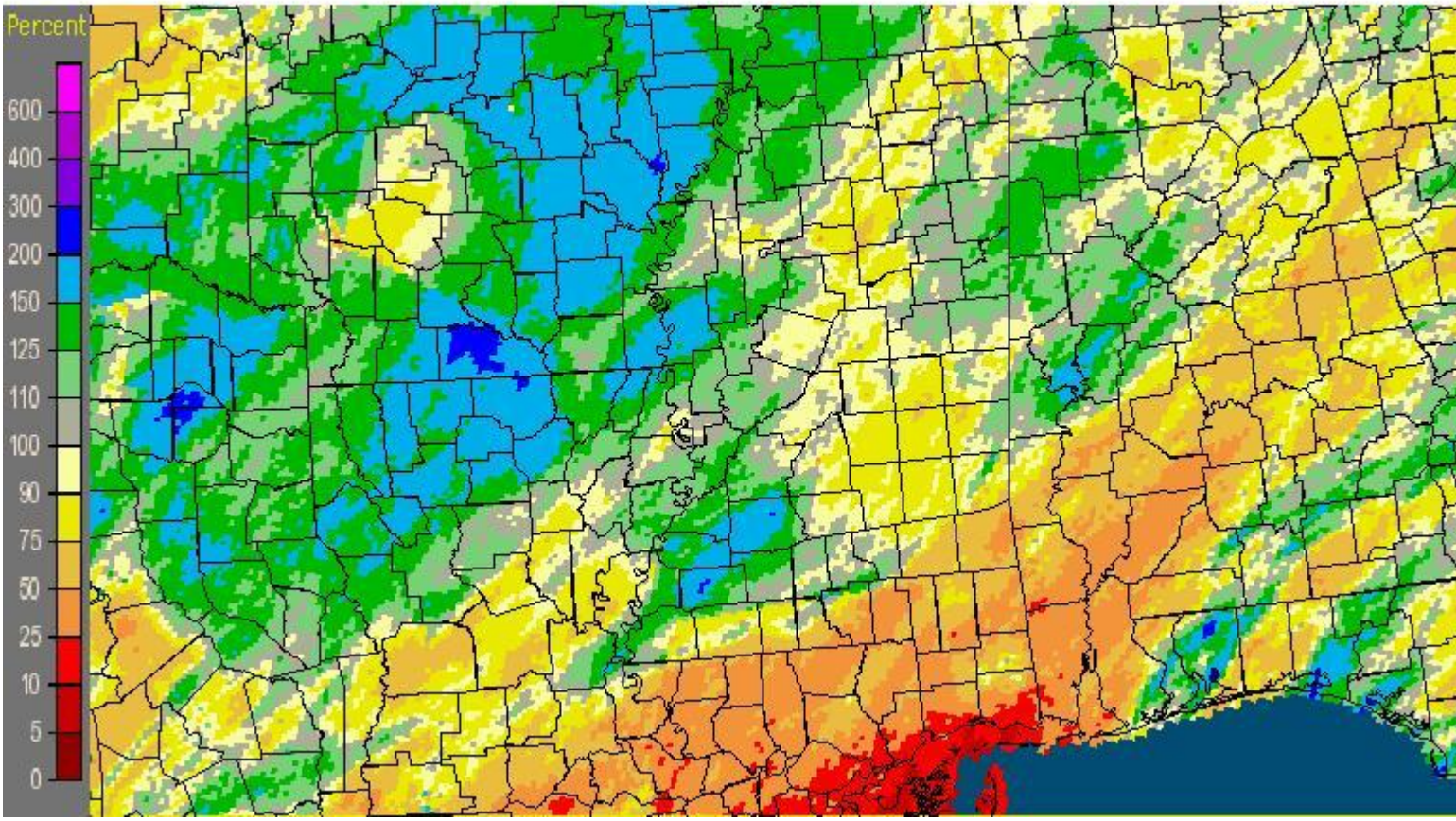
The largest rainfall amounts in the HSA from NWS Cooperative Observer reports during the period from 7 am on November 30th until 7 am on December 31st were: 11.51 inches at Eudora, AR; 10.86 inches at Crossett, AR; 9.82 inches at Union Church, MS; 9.79 inches at Oak Ridge, LA; 9.65 inches at Portland, AR; 9.47 inches at Oak Grove, LA; 9.05 inches at Stoneville, MS; and 9.03 inches at Pioneer, LA.

The lowest monthly rainfall totals in the HSA were: 4.15 inches at Purvis, MS; 4.39 inches at Dekalb, MS; 4.42 inches at Hattiesburg Chain Airport, MS; 4.46 inches at Hattiesburg 5SW, MS; 4.56 inches at Forest, MS; and 4.70 inches at McCool, MS.



December 2011 Rainfall Estimates

Mississippi: December, 2011 Monthly Percent of Normal Precipitation
Valid at 1/1/2012 1200 UTC- Created 1/3/12 21:41 UTC



December 2011 Percent of Normal Rainfall Estimates

Note: Observer rainfall and MPE may differ due to time differences.

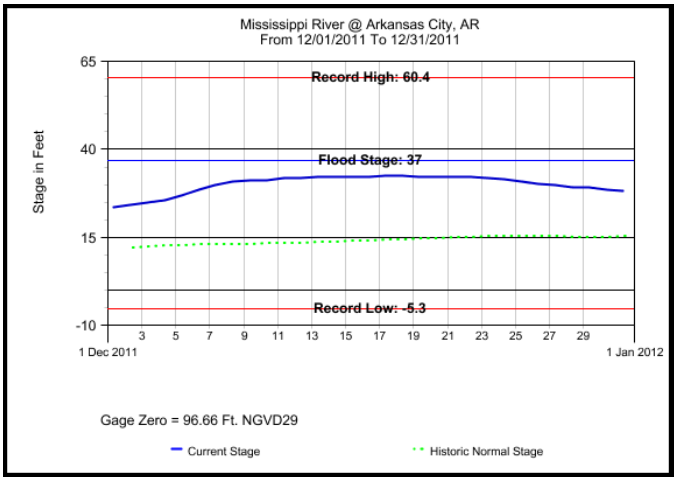
December rainfall for Selected Cities...

City (Airport)	December Rainfall	Departure from normal	2011 Rainfall	2011 Departure from Normal
Jackson, MS	6.67	+1.52	49.45	-4.69
Meridian, MS	5.41	+0.35	51.87	-4.29
Greenwood, MS	6.64	+0.99	38.43	-13.34
Greenville, MS	7.76	+2.14	34.38	-18.26
Hattiesburg, MS	4.42	-0.49	57.32	-1.85
Vicksburg, MS	6.94	+1.33	38.34	-16.40

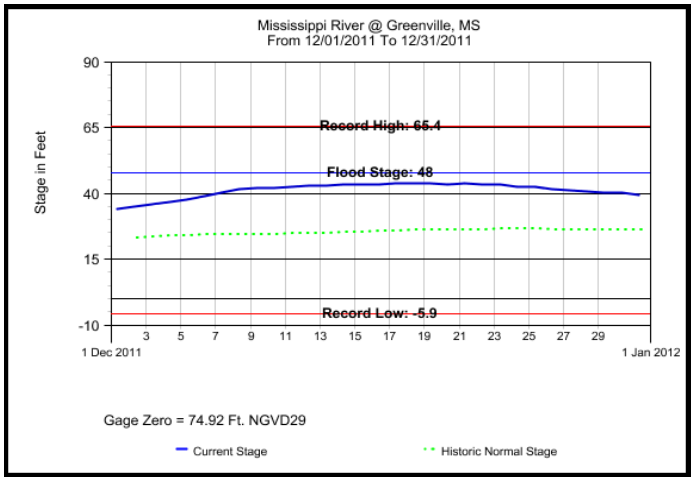
Mississippi River...

Mississippi River Plots for December, 2011

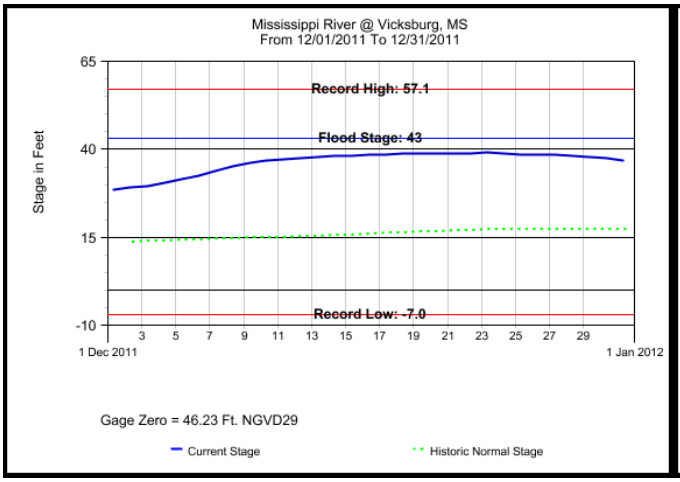
Plots Courtesy of the United States Army Corps of Engineers



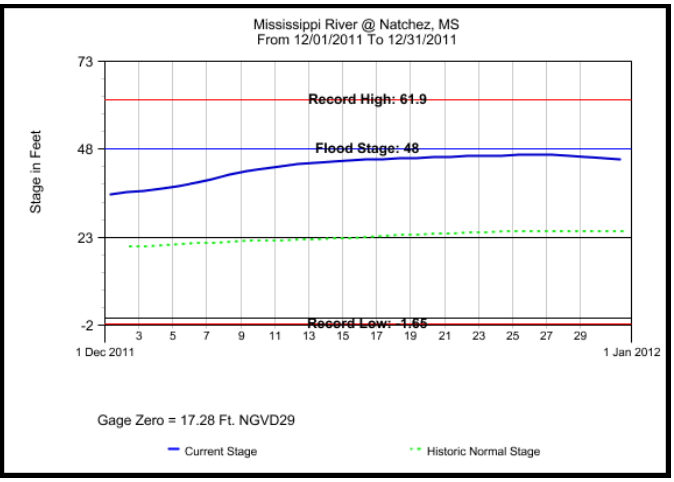
ARKANSAS CITY, MS



GREENVILLE, MS



VICKSBURG, MS



NATCHEZ, MS

Preliminary high and low stages for the month:

Location	FS	High Stage(ft)	Date	Low Stage(ft)	Date
Arkansas City, AR	37	32.58	12/17/11	23.19	12/01/11
Greenville, MS	48	43.89	12/18/11	33.84	12/01/11
Vicksburg, MS	43	39.05	12/23/11	28.40	12/01/11
Natchez, MS	48	46.53	12/27/11	35.02	12/01/11

Total Flood Warning products issued: 3
Total Flood Statement products issued: 26
Total Flood Advisories MS River : 25
Daily Climate and Ag WX Products (AGO'S) issued: 31
Daily CoCoRaHS Rainfall Products (LCO'S) issued: 31
Daily River and Lake Summary Products (RVD'S) issued: 31

Marty V. Pope

Service Hydrologist &
Latrice Maxie

Assistant Hydrologist/Observing Program Leader (OPL)

Note: Provisional stage and precipitation data were furnished with the cooperation of the Mississippi, Louisiana, and Arkansas National Weather Service Cooperative Observer Programs, United States Geological Survey (USGS), United States Army Corps of Engineers (USACE), Pearl River Valley Water Supply District (PRVWSD), Pat Harrison Waterway District, Pearl River Basin Development District, and the Mississippi Department of Environmental Quality.

cc: USGS Little Rock District
USGS Ruston District
USACE Mobile District
USACE Vicksburg District
USACE Mississippi Valley Division
USGS Mississippi District
SRH Climate, Weather and Water Division
Lower Mississippi River Forecast Center
Pearl River Valley Water Supply District
Hydrologic Information Center
Southern Region Climate Center
Pat Harrison Waterway District
Pearl River Basin Development District